

# IN THE CLAIMS

1. (currently amended) A method of selecting, from among N [""]Spatial Video CODECs~~[""]~~ where N is an integer number greater than 1, the optimum [""]Spatial Video CODEC~~[""]~~ for a same input signal I, comprising the following steps:

obtaining from all the N [""]Spatial Video CODECs~~[""]~~, for the same input signal I and a same quality parameter Q, a rate R and distortion measures D, Q being an integer value between 0 and 100, defined by any rate-distortion algorithm to provide a compression of the input sequence with constant rate or with constant distortion, and

calculating an optimality criterion by using the value  $L_n=f(R_n,D_n)$  calculated for all the  $n$  from 1 to N,  $n$  being the index of the [""]Spatial Video CODEC~~[""]~~, where  $f(R_n,D_n)$  is a function of  $R_n$  and  $D_n$ ,

wherein the Spatial Video CODECs are aligned according to ~~the~~ a theoretical MSE and the quality parameter Q, MSE being the Mean Square Error and computed as

$$MSE = \frac{\Delta^2}{12} = \frac{(2^{(C_1-Q/C_2)})^2}{12}$$
 for the case of uniform quantization with an average step  $\Delta$  defined as  $\Delta = 2^{(C_1-Q/C_2)}$  where  $C_1$  controls the minimal and maximal quality and  $C_2$  the variation of the distortion according to quality parameter Q,

wherein the ~~optimally~~ optimality criterion is defined as the minimization of said value  $L_n=f(R_n,D_n)$ ,

wherein said function is defined as the Lagrange optimization  $f(R_n,D_n)=R_n+\lambda D_n$ ,

and wherein the Lagrange multiplier that ~~weights~~ weighs the relative influence of the rate R and of the distortion D is defined as  $\lambda = \frac{1}{2 \cdot \ln(2) \cdot MSE}$ .

2. (previously presented) The method according to claim 1, wherein the input signal I is a natural image or a predicted image or any rectangular sub-block from a minimum size of 2x2 of the natural image or of the predicted image.

3. (currently amended) The method according to claim 1, wherein the rate  $R$  of the  $n$ -th [""]Spatial Video CODEC[""] is approximated by  $R = \alpha(N_T - \sum_{x_i=0}^{|x_i|<\Delta} N_{x_i})$ , where  $N_{x_i}$  is the number of coefficients with an amplitude equal to  $x_i$ ,  $N_T$  is the total number of coefficients, and the parameter  $\alpha$  is derived from experimental results.

4. (currently amended) The method according to claim 1, wherein the distortion  $D$  of the  $n$ -th [""]Spatial Video CODEC[""] is approximated by  $D = \sum_{x_i=0}^{|x_i|<\Delta} x_i^2 N_{x_i} + \frac{\Delta^2}{12} \sum_{|x_i|\geq\Delta} N_{x_i}$  where  $x_i$  is the amplitude of the coefficients and  $N_{x_i}$  is the number of coefficients with an amplitude of  $x_i$ .

5. (currently amended) The method according to claim 2, wherein the rate  $R$  of the  $n$ -th [""]Spatial Video CODEC[""] is approximated by  $R = \alpha(N_T - \sum_{x_i=0}^{|x_i|<\Delta} N_{x_i})$ , where  $N_{x_i}$  is the number of coefficients with an amplitude equal to  $x_i$ ,  $N_T$  is the total number of coefficients, and the parameter  $\alpha$  is derived from experimental results.

6. (currently amended) The method according to claim 2, wherein the distortion  $D$  of the  $n$ -th [""]Spatial Video CODEC[""] is approximated by  $D = \sum_{x_i=0}^{|x_i|<\Delta} x_i^2 N_{x_i} + \frac{\Delta^2}{12} \sum_{|x_i|\geq\Delta} N_{x_i}$  where  $x_i$  is the amplitude of the coefficients and  $N_{x_i}$  is the number of coefficients with an amplitude of  $x_i$ .

7. (currently amended) The method according to claim 3, wherein the distortion  $D$  of the  $n$ -th [""]Spatial Video CODEC[""] is approximated by  $D = \sum_{x_i=0}^{|x_i|<\Delta} x_i^2 N_{x_i} + \frac{\Delta^2}{12} \sum_{|x_i|\geq\Delta} N_{x_i}$  where  $x_i$  is the amplitude of the coefficients and  $N_{x_i}$  is the number of coefficients with an amplitude of  $x_i$ .